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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,973	07/21/2005	Shanjun Huang	H69.12-0001	7845
27367 7590 01/24/2008 WESTMAN CHAMPLIN & KELLY, P.A. SUITE 1400 900 SECOND AVENUE SOUTH MINNEAPOLIS, MN 55402-3319				
EXAMINER STORMER, RUSSELL D				
ART UNIT 3617		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/542,973

Applicant(s)

HUANG ET AL.

Examiner

Russell D. Stormer

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 3/20/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

Drawings

The drawings are objected to because:

Figures 4 and 7 do not have any reference characters and are not referred to in the Detailed Description of the invention.

The reference character "4" in figure 2 does not agree with the same in figures 6 and 8.

A reference character must be provided to point out the half-moon shaped shaft head and the tilted part.

None of the drawing figures clearly shows the wheel, or how the large and small rollers are mounted to the bracket 3. For instance, the mandrels, if shown at all in figures 6 and 8, appear to be represented by center lines (dot-dash lines).

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the...

The center of the small roller;

The ends of the large roller;

The left and right sides of the bracket, and the lower parts of the sides;

The bearings at the center of the sides panels;

The half-moon shape shaft head;

The left and right base of the bracket;

The riveted coupling of the bracket and shaft head of the long mandrel;

The tilted lower parts;

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The middle part of the brackets and the sides thereof;

The protruding stages and flat trapezia groove holes of the brackets;

The groove holes in the side panels; and

The pairs of large and small rollers in pairs of three and from 5-33

must be shown or the feature(s) canceled from the claim(s).

While it appears that some of the features noted above might be shown in some of the drawing figures, Reference characters are not provided for any of them, and it is not clear if these features are shown.

If the drawings are amended, Applicant should take care to avoid the entry of New Matter into the drawings or disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because it is poorly written. Phrases such as "which comprises of," "it characterizes in that," and "from a rim by fixed in the bat-shaped brackets" are difficult to understand and therefore the abstract does not clearly and concisely convey the gist of the invention as required.

Further, the word "new" should be deleted and the "double freedom structure" should be explained.

The disclosure is objected to because it is replete with poor language, unclear terms, and grammatical errors too numerous to list in their entirety.

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

"which causes the wheel carrier with big deflection moment;"

"for making the wheels to rotate;" and

"the present inventor has ever applied three patent applications..."

Moreover, numerous parts of the wheel assembly are described in the Detailed Description of the Invention, but many of these lack a reference character to point them out in the drawings, preventing the disclosure from providing a full, clear, and concise description of the invention.

Correction is required. See MPEP § 608.01(b).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) **is required**. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "a kind of universal wheel" in claim 1 is indefinite, and can be corrected by deleting the words "kind of."

The preamble of claim 1 sets forth the wheel and the elements it consists of, and the body of the claim further recites what appear to be similar or the same elements in a manner which renders the claim indefinite as to how many of each of the elements are present. For instance, are the big and small rollers of line 4 the same as those set forth in line 1?

The term "bat-shaped" is objected to as indefinite because a bat may have several different shapes (such as a baseball bat or a flying mammal) it is not clear what shape to which this term would limit the brackets.

The claims include several instances of terms not agreeing with related parts. Note the "mandrels of the big drum-shaped roller" in line 8 of claim 1 for example. It is not clear how many mandrels and rollers are being claimed; or else it is not clear how many mandrels are provided on the roller. Note also that "bracket" and "brackets" are used interchangeably throughout the claims.

The claims include several terms which lack antecedent basis. Note the lower parts, the left and right sides, the grooves, and the left and right ends of claim 1. The remaining claims also are replete with terms lacking proper antecedent basis.

Terms such as "left," "right," "upper," and "lower" are objected to as they are applicable only when the wheel (or the bracket) is positioned in a specific orientation. This orientation would change as the wheel rotates and the upper portion would

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become the lower portion. The terms are indefinite since the claims do not define the orientation of the wheel.

In claim 4 it is not clear if the term "trapezia" is the correct term for the claimed subject matter. This term would imply a plurality of trapezoidal shapes, meaning each groove hole would have multiple trapezoidal shapes somewhere thereon. Is the claim attempting to claim a trapezoidal groove or opening in the hole?

In view of the numerous shortcomings of the drawings, specification, and claims, the claims will be examined on the merits as best understood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith.

Smith discloses a universal wheel comprising pairs of large drum-shaped rollers 96 and small drum-shaped rollers 100 mounted in a bracket 80 and provided with

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bearings to facilitate rotation. The bracket or brackets have protruding stages 82, 84, 86 in flat trapezia shape having grooves to receive the mandrels of the rollers.

The bracket(s) would inherently have left and right, and upper and lower portions, depending on the orientation of the wheel. The bracket 80 is considered to be bat-shaped as defined in the claims, and further to have tilted parts as shown in figures 5 and 6.

The small rollers 96 have shafts 94 and the shaft of the large rollers 100 are unlabelled. Smith does not specify which shaft would be long and which would be short. However, those of ordinary skill in the art could readily determine suitable lengths for the shafts of each of the rollers, and to use shorter shafts for the large rollers and longer shafts for the small rollers would have been obvious as a mechanical expedient in order to properly mount the rollers.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith as applied to claim 1 above, and further in view of Dean.

The shafts of Smith do not show half-moon shaped heads.

Dean teaches a universal roller in which the rollers are mounted on shafts having ends which include a flat surface, forming a half-moon shape when viewed from the end of the shaft. The ends are fitted into similar shaped holes in the bracket and the shafts are prevented from rotating.

From this teaching it would have been obvious to modify the wheel assembly of Smith and substitute shafts having half-moon shapes ends to be inserted in holes of

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similar shape in order to prevent rotation of the shaft, thereby allowing the rollers to rotate around the shafts on the bearings.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references show other universal wheels and wheel assemblies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell D. Stormer whose telephone number is (571) 272-6687. The examiner can normally be reached on Monday through Friday, 9 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Russell D. Stormer/
Primary Examiner, Art Unit 3617